TECHNICAL NOTES

U.S. DEPARTMENT OF AGRICULTURE WYOMING SOIL CONSERVATION SERVICE

Biology No. 102 January 1986

Subject: BIGHORN SHEEP*

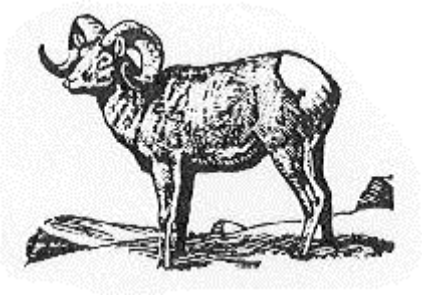
General

The Rocky Mountain bighorn sheep (Ovis canadensis canadensis) inhabits open mountainous terrain providing a mixture of grass and grasslike plant communities and suitable escape cover.

Food Requirements

Bighorn sheep are predominantly grazers, although shrubs also provide a significant part of the diet. Food habits vary with availability and succulence of plants. In Colorado, grasses and grasslike plants accounted for about 75 percent of the diet, while browse and forbs accounted for 19 percent and 65 percent, respectively. In southern Colorado, grasses and sedges (56 percent of annual diet) and shrubs (45 percent) were almost equally represented in the annual diet. The winter diet of sheep in Yellowstone National Park consisted of 61 percent grasses, 22 percent shrubs, and 17 percent forbs. Shrubs increase in importance in the winter diet, while grasses and sedges are the most important forage class from late spring through fall; forbs are used primarily in late winter and early spring. Seventy-five percent of all winter feeding observations in Yellowstone National Park were in grasslands.

Preferred grasses and grasslike plants include fescues (Festuca spp.), bluegrass (Poa spp.), muhlys (Muhlenbergia spp.), gramas (Bouteloua spp.), and sedges (Carex spp.). Commonly browsed shrubs include shrubby cinquefoil (Potentilla fruticosa), willow (Salix glauca), and fringed sage (Artemisia frigida).



Prepared by: Richard Rintamaki, State Biologist

State Resource Conservationist

*Information taken from Ecoregion M3113 Handbook and Habitat Suitability Index Models, Wildlife Species Narratives (literature searches), U.S. Fish and Wildlife Service, various dates between 1978-1984.

Water Requirements
Bighorn sheep apparently have less need for access to free water than do other ungulates. Water requirements may be met by eating snow.

Cover Requirements
The most important characteristic of bighorn sheep habitat is the interspersion of suitable grazing areas and steep cliffs, talus slopes, and other rough, rocky terrain. In Yellowstone National Park, 85 percent of all winter observations were within 100 yards (91.5m) of escape cover. Extensive forested cover may be a barrier to bighorn movements.

Some bighorn populations undertake seasonal altitudinal migrations, although others may show only a seasonal drift or range expansion. Summer habitat is characterized by open grassy areas below timberline or alpine tundra above timberline with rocky ledges and cliffs for escape cover. During winter, bighorns preferred steep south-, southwest-, and west-facing slopes on rocky terrain or ridgetops.

Daytime bedding sites are located wherever the sheep are feeding, although nighttime beds are usually located in the most precipitous sites available, providing security and good visibility downslope.

Reproductive Requirements
Ewes generally lamb in the most precipitous, inaccessible terrain available and remain in rocky habitats until the lambs are least 2 months old. Lambing grounds in Rocky Mountain National Park were typically on west or southwest exposures in the subalpine zone with sparse conifers providing additional cover.

Special Habitat Rerquirements
Bighorns satisfy their mineral requirements at natural or artificial salt licks. The availability of salt licks may influence habitat selection; ewe-juvenile groups in Colorado were concentrated near mineral sources during early to mid-July.

Interspersion Requirements
Suitable bighorn habitat must provide grazing areas interspersed with escape cover. In Yellowstone National Park, daily home range during the summer was generally 1/4 to 1/2 mile (0.4-0.8 km); typical summer home range was 2 to 3 miles (3.2-4.8 km). The average daily cruising radius of bighorns along Colorado's Poudre River was 832 yards (761m). Daily movements up to 1 mile (1.6 km) were common in Yellowstone in early winter, but were reduced to 1/8 mile (0.2 km) with deep snow.

Special Considerations
Seasonal movements in response to snow cover and available food occur in some bighorn populations, although such migrations are not as extensive as they were historically. Migration distances in Yellowstone ranged from 2 to 18 miles (3.2-2.8 km) along well-established routes of rocky terrain with very little wooded cover.

Although some bighorn herds can tolerate human activity, the response to human activity is highly variable; the quality of bighorn habitat is generally considered to be inverse to the degree of human influence.

During severe winters, bighorns may be out-competed for forage by other ungulates, especially elk (Cervus elaphus) and domestic livestock.